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AUTHOR	Gordon, Heather
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ABSTRACT

This paper discusses the impact of globalization and new information and communication technologies on the structures and practices of higher education. The first section addresses the integration of library and information technology services, focusing on experiences at the University of the Sunshine Coast (Queensland, Australia). The second section considers the risks of integration, including the perception that the two professional groups are different, as well as a survey on library reporting lines and university administration among the Council of Australian University Librarians. The third section covers designing for the future, including applying a transaction costs theory to organizational design, and alliances between educational institutions and e-commerce companies to offer tuition-free online education. The fourth section discusses the key to organizational design, including the following objectives of an information infrastructure for the future: (1) it must achieve a new level of cost effectiveness; (2) it must create a higher level of service; (3) it must develop a true research and development capability; and (4) it must rapidly develop and make rational a new, flexible organizational culture. (MES)

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CREATING INFORMATION STRUCTURES THAT WORK FOR THE NEW MILLENNIUM

Heather Gordon
University of the Sunshine Coast,
Queensland, Australia

"Historically, the purpose of organizational structures was to institutionalize stability; in the organization of the future, the goal of design will be to institutionalize change." [1]

While higher education is still criticised for being too slow to respond to changes in society and the environment, there is no doubt that the structures and practices of higher education are being transformed. Two conditions that have had a great impact on the speed of transformation have been globalisation and the incorporation of new information and communication technologies. Higher education is using new technologies to respond to the needs and the demands of the marketplace. However, higher education is still struggling to come to terms with the idea of the university as an economic enterprise including being a vehicle for promoting employment and economic development; while still retaining traditional collegial ideals such as academic freedom, tenure, self-governance, and the pursuit of truth or excellence. As such, we look for new approaches to organisational design to assist us in the competitive market of higher education. However, just as environmental factors do influence organisational design so do sociological and behavioural factors. In higher education both technology and internal power distributions have influenced the design of organisational structures. One theory argued by Jeffrey Pfeffer, in his book Organizational Design, is that design is an outcome of power and influence operating within organisations. As a result of this contest for control and power, work has become very routine. That the choice of technology, measured according to its routine, is a political choice as it allows management to avoid becoming dependent on the labour force [2]. There are other scholars who have picked up on this theme that during the twentieth century there has been a general tendency towards deskilling so that tasks are more mechanical and routine. Others have argued that technology has increased skill requirements, allowing workers to shed work that is mechanical and routine, to place greater value on information and knowledge, rather than manufacturing and commodities. This has created a new category of knowledge workers, workers who supposedly have more control over their own work. Whether or not you believe strongly in one theory or another, most managers and leaders are looking at creative ways to design and to implement organisational structures that are strategic and flexible enough to meet competitive challenges and social and individual expectations. "Rather than thinking in terms of decades, the pace of change in the environment will require the organization of the future to significantly change its underlying strategy on a regular basis of between 18 months and five years, depending on the industry. Indeed it is not uncommon to hear executives as they talk about strategic cycles, talk in terms of 'web years' signifying a compressed timeframe of three months rather than twelve." [3]

Integration of Library & IT Services

In order to meet their strategic goals, some universities have opted to merge areas based on the convergence of information and technology; changing service demands; and to create opportunities for increased cost effectiveness. In some institutions, the first step was to merge computing functions. Academic and administrative computing functions that may have been managed separately were brought together especially when more functions and applications were provided to the desktop. As advances have been made in telecommunications, network services encompassing voice, and data, were also brought together. Advances with audio visual technologies have added video to network services and all of these services were merged together into what is now commonly referred to as information technology services. As libraries' use of technology, and network services especially increased; and as IT service areas also had to start addressing increasing client service demands it is not difficult to see why

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some administrators started to see linkages between these two areas.

As the pace of technological change increased, service requirements also escalated, at the same time that resources started to decline and competition increased. For some organisations these factors were the catalyst to devise a new organisational structure that focussed on a more inclusive, strategic approach to thinking about the university's information management and infrastructure rather than only seeing issues and environmental factors from a separate organisational unit perspective. The integration of library and IT services, therefore, has usually resulted in a team approach to problem solving. Lois Jennings from the University of Canberra wrote an interesting paper that described the why, how and what of integrating library and IT services at the University starting in 1993. Among the many benefits of integration, she highlights four areas of performance that she feels could not have been made as successfully by independent units. The ability to set a unified vision for information and communication for the campus; to translate this vision into a resources development strategy that lead to comprehensive policy development; that provided for improved services and also offered a range of new services; and lead to opportunities for staff development. "Opportunities were provided for staff to work beyond the boundaries of their own professional group and to work closely with other professional groups." [4]

The opportunity to work closely with other professional groups has probably been one of the major benefits of the integration of IT Services and the Library at the University of the Sunshine Coast. The University opened in 1996, and is the first new Australian public university on a greenfield site in 25 years. We realised even before the physical campus was opened that we would have to rely on information and communication technologies to realise our goals of connecting to the broader region, other universities and to business and industry. The University's strategic plan was unequivocal about the central importance of our regional role in catalysing economic and cultural advancement. We opened in an environment of intense competition, with a very limited funding base and scarce resources but at a time when reliance on information and communications technologies were rapidly accelerating. The first four years were our establishment phase. We were busy establishing the physical campus and infrastructure, recruiting staff and students, designing and implementing academic programs and services.

From 1996 to mid 1997, the Library and IT Services were two separate units reporting to different executive areas within the University. The University Librarian reported to the Vice Chancellor and was a member of the University's executive; and IT Services, composed of a very small staff headed by a consultant, reported to the University Registrar. Both areas were very focused on establishing resources and services as quickly as possible. However, as the Library had to provide print and electronic resources from its first day of operation, there was a realisation that in order for the library to reach its goals it had to communicate and to work in collaboration with IT Services. Self interest soon lead to an awareness that as a new institution still creating and developing its infrastructure we had a tremendous opportunity to design an information infrastructure for the University using the talents of both Library and IT Services staff.

The other significant development towards more collaboration was the construction of the Library, Information Technology and Educational Services building. A functional brief was prepared in 1995 and stipulated that the building would house the Library and the Computer Centre as one contiguous and integrated whole. The building, which was recognised by the Royal Australian Institute of Architects, as Australia's Best Public Building of 1997, has a very open floor plan that has been designed to accommodate large traffic flows and to allow for future flexibility. The use of offices has been minimal, in part to keep operational costs down, but also to encourage dialogue among staff. Library and IT staff are housed on the ground and first floors of the building; and to encourage synergies among staff there are no separate divisional areas for library and IT staff, even though until mid 1997 organisationally they were separate. Network and instructional technology staff are located next to systems and reference librarians; computer technicians and help desk staff are located next to Library lending services staff; and collection services staff are close to audio-visual staff. The administrative reception area housed both the university librarian and the manager for IT Services sharing administrative assistance. This was the planning scenario for the building and still remains. Today, most staff still work in an open office environment and the mix of staff with complimentary responsibilities and expertise is proving to be successful and has afforded many opportunities for synergy and for staff to promote these opportunities

themselves rather than being directed to do so. After five years, the University is now progressing from its establishment phase to a growth phase and as a result we are about to change our organisational design to include records management, archive, registry and reprographic functions into the mix with library and IT. The organisational design that is selected will be very important as not all functions will be housed within the Library building but the strategic directions of this additional merger is intended to focus on developing synergy and a consolidated approach to information management at the University.

Risks of Integration

So if there are many good reasons and outcomes for integration, why then do not more organisations consider such mergers and why have some mergers disappeared over time? One reason is perception – there is still a perception that the cultures of the two professional groups are different.

A paper presented in Shanghai in 1998 at the International Conference on New Missions of Academic Libraries in the 21st Century, outlined changes in academic libraries in Taiwan. A survey of library directors reported a preference for cooperative partnerships between libraries and computer centres to any administrative mergers on campus. In Taiwan, traditionally the library has had a higher position than the computer centre on the university campus. This along with the perception that there are many important differences between libraries and computer centres have discouraged Taiwan's librarians from supporting administrative mergers. [5]

Because of the convergence of information and communications technologies and the strong emphasis on electronic information, staff involved in the service delivery side of information have had to work more closely with technical staff. In some cases, there has been transference of some technical duties; not only within units, for example, reference librarians dealing with printer hardware support, but also among professions. For example, reference librarians dealing with network authentication and authorisation issues; and IT network or systems administrators answering more information literacy related questions such as 'okay now that I've logged into the network how do I search this database' at IT help desks. As Jennings noted in her paper, users focus on service outcomes and less on the organisational structures that deliver them. However, as technologies have created greater convergence between the library and IT professions, it has also created the need for more self-examination and in some cases an attempt to define both the "knowledge and domain of each." [6] Jennings also outlines the political risks of integration as other managers within the organisation may view the merger of budget lines as creating an 'empire.' Assuming that the new structure now has too much money and too many staff. This can lead to debates about centralisation vs. decentralisation and the value for money and control. Influence is another risk area, as most often the integration does result in policy formation based on strategies that go across organisational boundaries and may seem to be threatening to professional responsibilities especially between the traditional lines of general vs. academic staff. Most recently, this has been highlighted by flexible learning initiatives and some of the debates concerning accountabilities for the content verses design verses the technical delivery using educational technologies.

The Australian National University recently conducted a survey on library reporting lines and university administration among the Council of Australian University Librarians. Twenty-four out of the 39 university libraries responded. From the 24 responses, 12 of the university libraries reported that responsibility for both the library and IT services reported to the same executive area within the University, even if the library and IT services were separate units with separate directors and budgets. Some of the libraries reported positively on this development in that it may create an opportunity to address a comprehensive information policy for the university rather than just from a divisional or organisational unit perspective. Also it may be an opportunity to develop an information policy for the university within a scholarly context rather than just addressing infrastructure issues from a resourcing perspective. From these 12 libraries, 4 libraries reported having a university librarian responsible for both library and IT services. The survey results highlight that even without total integration, but with a common reporting line, there are probably more opportunities for communication, cooperation and certainly increased insight into the issues of the other operating area.

Designing for the Future

If we accept that fact that external factors, in particular, have a great impact on the design of organisational structures, then how do we organise for a future that is rapidly ever changing, and/or one

that perhaps we cannot foresee? Perhaps more than ever we need to look at scenario planning to strategise around probable futures. Our decision making tends to become more complicated as the future becomes more difficult to predict and to control. Some researchers have applied a transaction costs theory to organisational design and briefly the theory is that the more uncertainty we face, the higher the risks for market failure which leads to hierarchical relationships to control transaction costs to protect profit margins. [7] An over-simplified observation of this theory is when it gets tough and confusing, it is human nature to return to something known including an organisational design that is more familiar, centralist and provides more control. However, if information and communication technologies continue to develop, and there is no reason to doubt that this is not the case, then perhaps the only way for higher education to survive is to design organisational structures that enable flexibility and responsiveness to change.

Recently I read an opinion piece in The Chronicle of Higher Education that looked at a near future of a "tuition free college degree based on mass produced distance education." [8] Online education seems to have created a price war as more providers, both from commercial non-university companies and from higher education, enter the marketplace and as they begin to cooperate and to collaborate. US entrepreneur Michael Saylor, CEO of MicroStrategy, recently announced that he was funding $100 million dollars of his own money to develop an online university, offering an Ivy League quality education free of charge. We have also seen many other examples of what were once paid services now offered for free because of e-commerce opportunities, e.g. hosting of email accounts and web pages. The author of the opinion piece, feels that the alliance between an educational institution and an e-commerce company or companies will be able to offer tuition free online education. Not only will the real money not come from online advertisements that the student may view before, or even during, the lecture; but rather from the shopping portals that would be tailored to meet the interests of the student. He sees the portals as being profitable revenue sharing agreements, with commercial sites sharing a percentage of sales with the educational site that has provided the link.

Key to Organisational Design

Whether or not you chose to believe this 'future' it serves to illustrate as an example of the rapidly emerging education markets and the subsequent dramatic changes that are facing higher education. How universities develop strategies in response to this type of future may impact on the organisational designs that they experiment with. Jerry Campbell from the University of Southern California believes that any information infrastructure for the future must accomplish four key objectives. [9]

1. It must achieve a new level of cost effectiveness. Improving on staff productivity while reducing human intervention means that traditional approaches may have to be abandoned or as others have indicated if it doesn't add value stop doing it.

2. It must create a higher level of service. To do so probably will require greater resource allocations, new skills, and the willingness to select opportunities.

3. It must develop a true research and development capability. By thinking creatively we can redesign our work to be innovative, therefore creating value and also to create new opportunities for emerging markets.

4. It must rapidly develop and make rational a new, flexible organizational culture that includes a broad range of skills, and creates espirit de corps around a new and powerful mission. Values, culture and shared goals become more important and may require many of us to think outside the square of our current profession and/or our current comfort zones. Knowledge workers may have to be managed, if at all, in new and different ways. Conflict management and negotiation skills may be even more important in an organisational structure designed to change frequently and rapidly in response to emerging opportunities.

If one of the goals of design is to institutionalise change, then there will not be one perfect design to model. As the strategic foci of our institutions change, so too may the organisational design change. Being able to design and to implement innovative and strategic organisations, quickly and effectively, is becoming an important skill for managers and leaders expected to act as change agents and

entrepreneurs. It is a challenge, not only for the designers, but also for all of us working within the higher education environment. Hopefully it will be seen as a positive challenge and who knows you may even have a longer and more satisfying career!

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